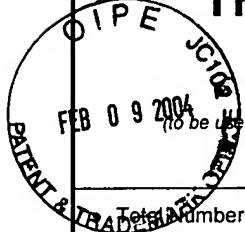


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# TRANSMITTAL FORM

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10 plus  
figures

Application Number	10/647,088
Filing Date	August 21, 2003
First Named Inventor	Irving BOIME
Art Unit	1645
Examiner Name	Not Yet Assigned
Attorney Docket Number	295002005901

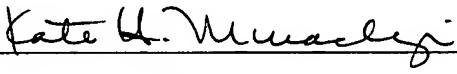
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<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to Group
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<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
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<input type="checkbox"/> Response to Missing Parts/ Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

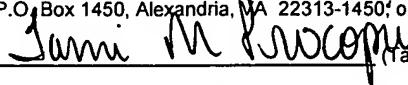
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## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	MORRISON & FOERSTER LLP Kate H. Murashige - 29,959
Signature	
Date	February 6, 2004

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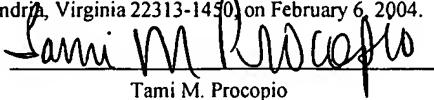
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PATENT  
Docket No. 295002005901

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

BOIME and BEN-MENAHEM.

Serial No.: 10/647,088

Filing Date: August 21, 2003

For: MULTIPLE DOMAIN  
GLYCOPROTEIN HORMONES AND  
METHODS OF USING

Examiner: Unassigned

Group Art Unit: 1645

**INFORMATION DISCLOSURE  
STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO-1449. Copies of document numbers 2-12, 14, 19, 21, 23-24, 30, and 33 were previously submitted in an Information Disclosure Statement and/or Office Action, directed to the related application Serial Number 08/971,439 filed 17 November 1997, and, accordingly, copies are not included herewith. This protocol conforms with 37 C.F.R. § 1.98(d) and M.P.E.P. 609(A)(2). The Examiner is requested to make these documents of record in the application.

Serial No. 10/647,088  
Docket No. 295002005901

sd-165704

Document number 1 listed on the attached Form PTO-1449 was cited in an International Preliminary Examination Report mailed on July 3, 2000 (copy attached) directed to a counterpart international or foreign application.

This Information Disclosure Statement is submitted:

- With the application; accordingly, no fee or separate requirements are required.
- Before the mailing of a first Office Action after the filing of a Request for Continued Examination under § 1.114.
- Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.
- After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.
  - A fee is required. A check in the amount of \_\_ is enclosed.
  - A fee is required. Accordingly, a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.
  - A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly; no fee is believed to be due.
- After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.
  - A Certification under 37 C.F.R. § 1.97(e) is provided below and a check in the amount of \_\_ is enclosed.
  - A Certification under 37 C.F.R. § 1.97(e) is provided below and a Fee Transmittal form (PTO/SB/17 is attached to this submission in duplicate.)

Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 and § 1.98 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does

not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal form is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing 295002005901. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: February 6, 2004

Respectfully submitted,

By: Kate H. Murashige  
Kate H. Murashige  
Reg. No. 29,959  
Morrison & Foerster LLP  
3811 Valley Centre Drive, Suite 500  
San Diego, California 92130-2332  
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Form PTO-1449

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

FEB 09 2004

PARENT &amp; TRADEMARKS

Docket Number 295002005901

Application Number 10/647,088

Applicant

BOIME and BEN-MENAHEM

Filing Date August 21, 2003

Group Art Unit 1645

Mailing Date: February 6, 2004

## U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
	1.	08/1994	5,338,835	Boime	530	398	
	2.	01/1998	5,705,484	Thomason	214	2	
	3.	05/1995	5,420,247	Gearing et al.	530	350	

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
	4.	12/1985	EP 0 163 406	Europe			
	5.	05/1998	EP 0 839 831	Europe			
	6.	05/1985	WO 01959	PCT			
	7.	09/1990	WO 90/09800	PCT			
	8.	11/1991	WO 91/16922	PCT			
	9.	12/1992	WO 92 22568	PCT			
	10.	08/1995	WO 95/22340	PCT			
	11.	02/1996	WO 96/05224	PCT			
	12.	05/1999	WO 99/25849	PCT			

## OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title
	13.	Bielinska, J <i>Cell Biol</i> (1990) 111:330a (Abstract 1844).
	14.	Boime et al., "Synthesis of Genetically Fused Single Chain Analog of Human Chorionic Gonadotropin: Implications for Drug Design and Structure-Function Relationships," <i>Proceeding of the Symposium: "The Ovary Regulation, Dysfunction and Treatment,"</i> 1106:25-27 (1996).
	15.	Campbell et al., "Conversion of Human Choriogonadotropin into a Follitropin by Protein Engineering", <i>Proc Natl Acad Sci</i> (1991) 88:760-764.
	16.	Chen and Okayama, "High-Efficiency Transformation of Mammalian Cells by Plasmid DNA", <i>Mol Cell Biol</i> (1987) 7:2745-2752.

EXAMINER: (examiner)

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449  INFORMATION DISCLOSURE CITATION IN AN APPLICATION  Use several sheets if necessary)		Docket Number 295002005901	Application Number 10/647,088
		Applicant BOIME and BEN-MENAHEM	
		Filing Date August 21, 2003	Group Art Unit 1645
		Mailing Date: February 6, 2004	

## OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title
	17.	Chen et al., "The Carboxy-Terminal Region of the Glycoprotein Hormone $\alpha$ -Subunit: Contributions to Receptor Binding and Signaling in Human Chorionic Gonadotropin" <i>Molec Endocrinol</i> (1992) 6:914-919.
	18.	Dayhoff et al., "A Model of Evolutionary Change in Proteins" <i>Atlas of Protein Sequences and Structure</i> (1972) 5:89-99.
	19.	Duijkers et al., "Follicular Fluid Hormone Concentrations After Ovarian Stimulation Using Gonadotropin Preparations with Different FSH/LH ratios. 1. Comparison of an FSH-Dominant and a Purified FSH Preparation," <i>International Journal of Fertility and Women's Medicine (USA)</i> 42(5):306-310 (1997) [abstract only].
	20.	Erickson et al., "Synthetic $\alpha$ -Subunit Peptides Stimulate Testosterone Production in Vitro by Rat Leydig Cells" <i>Endocrinology</i> (1990) 126:2555-2560.
	21.	Fares, "Design of a Long Acting Follitropin Agonist by Fusing the C-terminal Sequence of the Chorionic Gonadotropin $\beta$ Subunit to the Follitropin" <i>Proc Natl Acad Sci USA</i> (1992) 89:4304-4308.
	22.	Kuetmann, "Receptor Binding Regions of hLH and hCG $\beta$ -Subunit: Structural and Functional Properties" pgs. 103-117.
	23.	LaPolt, "Enhanced Stimulation of Follicle Maturation and Ovulatory Potential by Long Acting Follicle-Stimulating Hormone Agonists with Extended Carboxyl-Terminal Peptides", <i>Endocrinology</i> (1992) 131:2514-2520.
	24.	Lapthorn, "Crystal Structure of Human Chorionic Gonadotropin" <i>Nature</i> (1994) 369:455-461.
	25.	Lustbader et al., <i>EDS, Springer Verlag</i> (New York) (1994) 122-134.
	26.	Matzuk et al., "Effects of Preventing O-glycosylation on the Secretion of Human Chorionic Gonadotropin in Chinese Hamster Ovary Cells", <i>Proc Natl Acad USA</i> (1987) 84:6354-6358.
	27.	Matzuk et al., "The Glycoprotein $\alpha$ -Subunit is Critical for Secretion and Stability of the Human Thyrotropin $\beta$ -Subunit" <i>Mol Endocrinol</i> (1988) 2:95-100.
	28.	Matzuk and Boime, "The Role of the Asparagine-linked Oligosaccharides of the $\alpha$ Subunit in the Secretion and Assembly of Human Chorionic Gonadotropin" <i>J Cell Biol</i> (1988) 106:1049-1059.
	29.	Moyle et al., "Co-Evolution of Ligand-Receptor Pairs" <i>Nature</i> (1994) 368:251-255.
	30.	Patel, "A Clasped Embrace" <i>Nature</i> 369:438-439.
	31.	Puett et al., "Delineation of Subunit and Receptor Contact Sites by Site-Directed Mutagenesis of hCG $\beta$ " <i>Glycoprotein Hormones</i> .
	32.	Sachais et al., "Molecular Basis for the Species Selectivity of the Substance P Antagonist CP-96, 345" <i>Biol Chem</i> (1993) 268:2319.

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